

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P27696WO Ru/	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2004/000104	International filing date (day/month/year) 09/01/2004	(Earliest) Priority Date (day/month/year) 24/01/2003
Applicant  SONY ERICSSON MOBILE COMMUNICATIONS AB		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 2c

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☒ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2004/000104

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

The present invention generally relates to the field of noise reduction systems which are equipped with an audio-visual user interface, in particular to an audio-visual speech activity recognition system (200b/c) of a video-enabled telecommunication device which runs a real-time lip tracking application that can advantageously be used for a near-speaker detection algorithm in an environment where a speaker's voice is interfered by a statistically distributed background noise ( $n'(t)$ ) including both environmental noise ( $n(t)$ ) and surrounding person's voices

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP2004/000104

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G10L21/02 G10L11/02 G10L15/24

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G10L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/29784 A (CLARITY LLC ; ERTEN GAMZE (US)) 11 April 2002 (2002-04-11)	1,2,4,
Y	abstract; figures 11,13-15	14,15
Y	WO 02/084644 A (DEUTSCHE TELECOM AG) 24 October 2002 (2002-10-24)	3,5-9
	abstract	
	& US 2003/191633 A1 (BERGER JENS) 9 October 2003 (2003-10-09)	5,8,9
	abstract	
Y	US 2003/007633 A1 (WILDIE MARK GREIG ET AL) 9 January 2003 (2003-01-09)	3,6,7
	abstract	
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

Date of the actual completion of the international search

10 May 2004

Date of mailing of the international search report

28/05/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Quélavoine, R

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/000104

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>GIRIN L ET AL: "NOISY SPEECH ENHANCEMENT BY FUSION OF AUDITORY AND VISUAL INFORMATION: A STUDY OF VOWEL TRANSITIONS" 5TH EUROPEAN CONFERENCE ON SPEECH COMMUNICATION AND TECHNOLOGY. EUROSPEECH '97. RHODES, GREECE, SEPT. 22 - 25, 1997, EUROPEAN CONFERENCE ON SPEECH COMMUNICATION AND TECHNOLOGY. (EUROSPEECH), GRENOBLE : ESCA, FR, vol. VOL. 5 OF 5, 22 September 1997 (1997-09-22), pages 2555-2558, XP001045210 the whole document</p> <p>-----</p>	1,2,4

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/000104

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0229784	A	11-04-2002	AU 9645901 A	15-04-2002
			WO 0229784 A1	11-04-2002
			US 2002116197 A1	22-08-2002
WO 02084644	A	24-10-2002	DE 10120168 A1	24-10-2002
			WO 02084644 A1	24-10-2002
			EP 1382034 A1	21-01-2004
			US 2003191633 A1	09-10-2003
US 2003191633	A1	09-10-2003	DE 10120168 A1	24-10-2002
			WO 02084644 A1	24-10-2002
			EP 1382034 A1	21-01-2004
US 2003007633	A1	09-01-2003	NONE	